CLAIMS

1. A method for detecting corners of a region, the method comprising the steps of:

   detecting edges interior to a region of interest;

   culling the detected edges in order to obtain a reduced edge group from the detected edges, the reduced edge group comprising a plurality of points;

   selecting a plurality of candidate corner points; and

   detecting region corner points from the plurality of candidate corner points based on a predetermined relationship between each of the candidate corner points and characteristic edge points of the region of interest.

2. The method of claim 1 wherein the step of detecting edges further comprises the step of applying an edge detection filter to an image of the region of interest.

3. The method of claim 2 wherein the edge detection filter comprises a Laplacian filter.

4. The method of claim 1 wherein the step of selecting a plurality of candidate corner points comprises the steps of:
   obtaining a measure of cornerness for each one point from the plurality of points;

selecting the plurality of candidate corner points from the plurality of points by applying a predetermined criterion.

5.   The method of claim 1 wherein the step of culling the detected edges further comprises the step of masking selected areas interior to the region of interest.

6.   The method of claim 4 wherein the step of selecting a plurality of candidate corner points further comprises the steps of:
comparing the measure of cornerness for each one point from the plurality of points to a predetermined threshold;

selecting a point from the plurality of points as a candidate corner point if the measure of cornerness for said point is substantially equal to or greater than the predetermined threshold.

7.   The method of claim 1 wherein the region of interest is a substantially rectangular region of interest.

8.   The method of claim 7 wherein the step of detecting region corner points comprises:

determining, for each candidate corner point from the plurality of candidate corner points, a distance from said each candidate corner point to at least one characteristic edge point from a plurality of characteristic edge points of the substantially rectangular region of interest; and

wherein said predetermined relationship comprises said distance.

9. The method of claim 8 further comprising the step of: determining whether the region is substantially located at an angle in relation to the substantially rectangular region of interest.

10. The method of claim 1 wherein the region is an address label on a delivery item.

11. A system for detecting corners of a region comprising: means for detecting edges interior to a region of interest;

    means for culling the detected edges in order to obtain a reduced edge group from the detected edges, the reduced edge group comprising a plurality of points;

    means for selecting a plurality of candidate corner points from the plurality of points; and,

    means for identifying region corner points from the plurality of candidate corner points based on a predetermined relationship between each candidate corner point and characteristic edge points of the region of interest.

12. The system of claim 11 wherein the means for detecting edges comprises means for applying an edge detection filter to an image of the region of interest.

13. The system of claim 11 wherein the means for culling the detected edges comprise means for masking selected areas interior to the region of interest.

14. The system of claim 11 wherein the means for selecting the plurality of candidate corner points comprise:
means for obtaining a measure of cornerness for each one point from the plurality of points;

means for selecting the plurality of candidate corner points from the plurality of points by applying a predetermined criterion.

15. The system of claim 14 wherein the means for selecting the plurality of candidate corner points further comprises:
means for comparing the measure of cornerness for each one point from the plurality of points to a predetermined threshold;

means for selecting a point from the plurality of points as a candidate corner point if the measure of cornerness for said point is substantially equal to or greater than the predetermined threshold.

16. The system of claim 11 further comprising:
means for determining, for each candidate corner point from the plurality of candidate corner points, a distance from said each candidate corner point to at least one characteristic edge point from a plurality of characteristic edge point of the region of interest; and

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wherein said predetermined relationship comprises said distance.

17. The system of claim 16 further comprising:
means for determining whether the region is substantially located at an angle in relation to the region of interest.

18. A computer program product comprising:
a computer usable medium having computer readable code embodied therein, the computer readable code capable of causing a computer system to:
detect edges interior to a region of interest;

cull the detected edges in order to obtain a reduced edge group from the detected edges, the reduced edge group comprising a plurality of points;

obtain a measure of cornerness for each one point from the plurality of points;

select a plurality of candidate corner points from the plurality of points by applying a predetermined criterion; and

identify region corner points from the plurality of candidate corner points based on a predetermined relationship between each candidate corner point and characteristic edge points of the region of interest.

19. The computer program product of claim 18 wherein the computer readable code capable of causing a computer system

to detect edges is further capable of causing the computer system to:

apply an edge detection filter to an image of the region of interest.

20. The computer program product of claim 18 wherein the computer readable code capable of causing a computer system to cull the detected edges is further capable of causing the computer system to:

mask selected areas interior to the region of interest.

21. The computer program product of claim 18 wherein the computer readable code capable of causing a computer system to select a plurality of candidate corner points is further capable of causing the computer system to:

compare the measure of cornerness for each one point from the plurality of points to a predetermined threshold;

select a point from the plurality of points as a candidate corner point if the measure of cornerness for said point is substantially equal to or greater than the predetermined threshold.

22. The computer program product of claim 18 wherein the region of interest is a substantially rectangular region of interest.

23. The computer program product of claim 22 wherein the computer readable code capable of causing a computer system to identify region corner points is further capable of causing the computer system to:

determine, for each candidate corner point from the plurality of candidate corner points, a distance from said each candidate corner point to at least one characteristic edge point from a plurality of characteristic edge points of the substantially rectangular region of interest; and

wherein said predetermined relationship comprises said distance.

24. The computer program product of claim 23 wherein the computer readable code is further capable of causing a computer system to:
determine whether a region defined by said region corner points is substantially located at an angle in relation to the substantially rectangular region of interest.